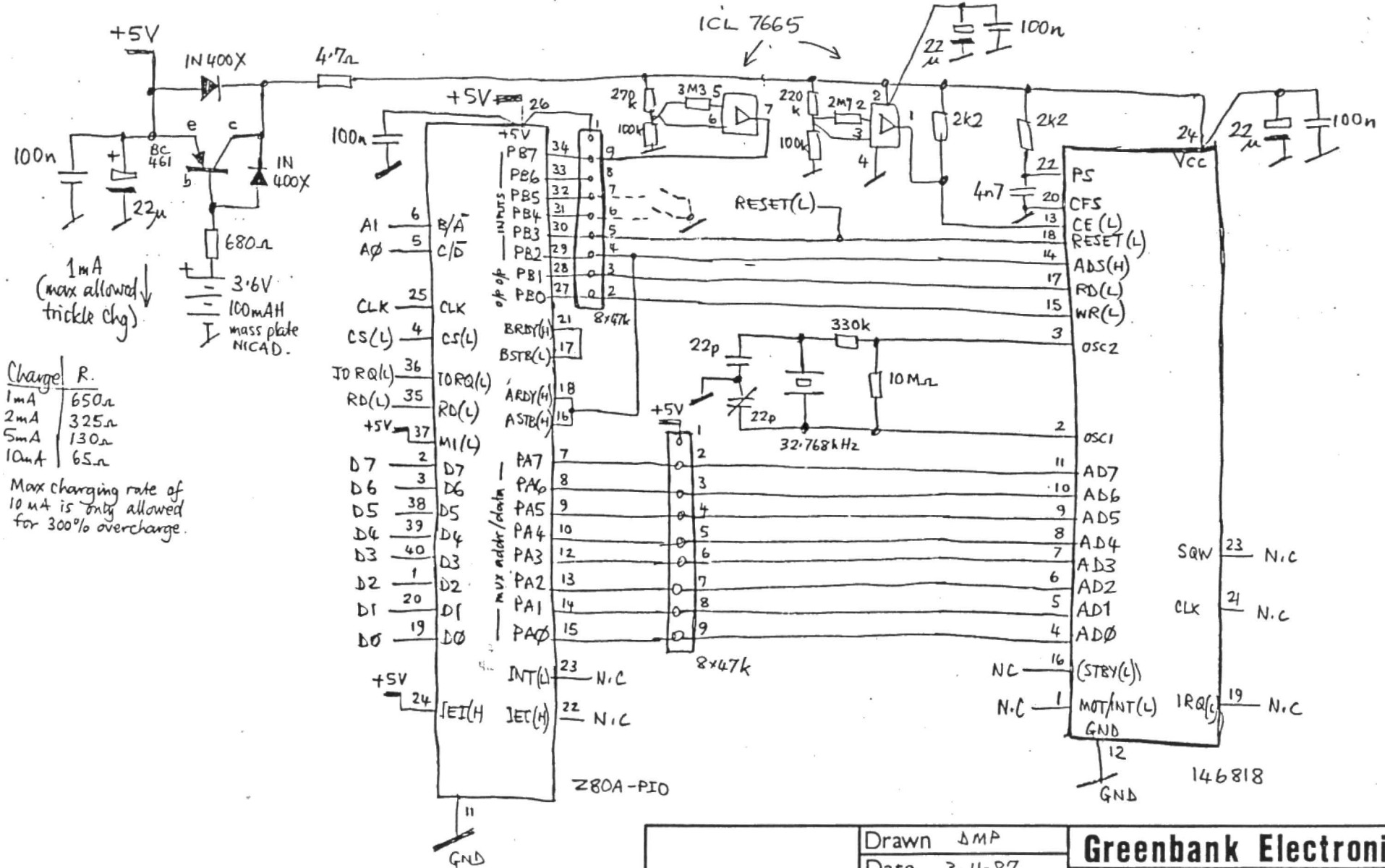


Charge	R.
1mA	650Ω
2mA	325Ω
5mA	130Ω
10mA	65Ω

Max charging rate of 10 mA is only allowed for 300% overcharge.

Drawn	AMP
Date	3-11-87
Scale	—

Greenbank Electronics

BASIC RTC INTERFACE TO PIO

COMPONENT PRICE LIST FOR XRTC1 CARD — List Ref: XRTC1/P1
(Prices exclude VAT) — 23rd February 1988

Resistors (Ø.25W and SIL)						
CR254R7	1	R		@ Ø.Ø2	Ø.Ø2	
CR2568ØR	1	R		@ Ø.Ø2	Ø.Ø2	
CR252K2	2	R		@ Ø.Ø2	Ø.Ø4	
CR2510ØK	2	R		@ Ø.Ø2	Ø.Ø4	
CR2522ØK	1	R		@ Ø.Ø2	Ø.Ø2	
CR2533ØK	1	R		@ Ø.Ø2	Ø.Ø2	
CR2527ØK	1	R		@ Ø.Ø2	Ø.Ø2	
CR252M7	1	R		@ Ø.Ø2	Ø.Ø2	
CR253M3	1	R		@ Ø.Ø2	Ø.Ø2	
CR2510M	1	R		@ Ø.Ø2	Ø.Ø2	
SIL Resistors (Use Sockets)						
SIL8-47K	2	RP	(8 x 47k)	@ Ø.26	Ø.52	
	14			RXRTC1	Ø.76	Ø.76
Capacitors						
("MAL" = Low Leakage Miniture Aluminium Electrolytic; "CER" = Ceramic; "DEC = 47n-1ØØn Decoupling Grade Polyester, or Ceramic.)						
CER22P	1	C		@ Ø.Ø5	Ø.Ø5	
CER4N7	1	C		@ Ø.Ø5	Ø.Ø5	
CER33ØP	1	C		@ Ø.Ø5	Ø.Ø5	
DEC	3	C		@ Ø.Ø9	Ø.27	
DEC1ØØN	3	C		@ Ø.Ø9	Ø.27	
MAL22U	3	C		@ Ø.Ø9	Ø.27	
TC22P	1	CV1	(trimmer capacitor)	@ Ø.28	Ø.28	
	13			CXRTC1	1.24	1.24
Diodes						
1N4ØØX	3	CR	(eg 1N4ØØ2)	@ Ø.Ø6	Ø.18	
	3			DXRTC1	Ø.18	Ø.18
Transistor						
BC461	1	Q		@ Ø.4Ø	Ø.4Ø	
	3			TXRTC1	Ø.4Ø	Ø.4Ø
Quartz Crystals						
32.768K	1	Y1		@ 1.ØØ	1.ØØ	
	1			YXRTC1	1.ØØ	1.ØØ
Integrated Circuits						
Z8ØA-PIO (4Ø)	1			@ 3.25	3.25	
146818 (24)	1			@ 4.25	4.25	
7665 (8)	1			@ 4.25	4.25	
	3			ICXRTC1	11.75	11.75

list continues on next page

XRTC1 COMPONENT PRICE LIST continued — List Ref: XRTC1/P1
(Prices exclude VAT)

DIL and SIL Sockets					
SCON9	2	RP	@ Ø.Ø6	Ø.12	
DIL8	1	U	@ Ø.Ø8	Ø.Ø8	
DIL24	1	U	@ Ø.25	Ø.25	
DIL4Ø	1	U	@ Ø.3Ø	Ø.6Ø	
	5		SKXRTC1	1.Ø5	1.Ø5
Sundry					
BAT3V61ØØ	1	B (3.6 volt 1ØØmA Nicad)	@ 2.75	2.75	
			SYXRTC1	2.75	2.75
Total (excluding VAT)		Kit Order Code	PXRTC1		19.13

Please Note: The 'X' in the RTC1 code signifies that the board is not yet in production and that there may be some changes to the circuit when the board is laid out.

This design is to be used in conjunction with an existing board which has all the address decoding and buffering. eg the QS-1 board. If one of the Z8ØA-SIO integraded circuits is left off then you will find all the signals you require to feed the Z8ØA-PIO for the Real Time Clock are at the now vacant IC socket.

When a circuit board is eventually made the necessary address decoding, buffering etc will be incorporated.

OPTIONS (ie Items not included in standard kit of parts)
(Prices each exclude VAT)

RTC1 Bare Board BRTC1 not available yet suggest using DIP-1 board	BDIP1	1Ø.95
1" Card Front Kit, inc fixing and mtg. brackets new type	CF1	2.99
original type (RS)	OCF1	4.22
4Ø way IDC Dip Plug	IDIP4Ø	2.25
4Ø way IDC Ribbon Cable (price per metre cut to any length)	IDCR4Ø	3.75

Add 5Øp handling charge to each transaction, and 15%

Greenbank Electronics
46Ø New Chester Road
Rock Ferry, Birkenhead
Merseyside. L42 2AE

Telephone:- Ø51-645 33151

ACCESS and VISA welcome

RS data

Microprocessor compatible real time clock i.c. 146818

Stock number 302—003

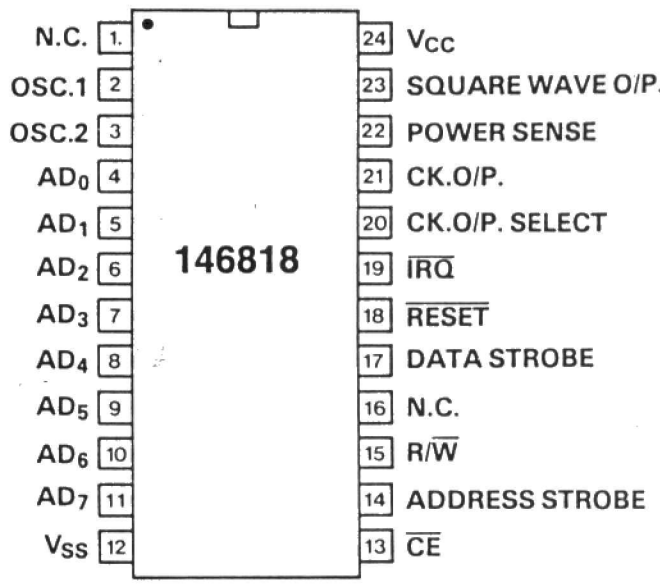
The 146818 is a 6800 peripheral CMOS device which combines three unique features: a complete time-of-day clock with alarm, calendar, a programmable periodic interrupt and square-wave generator, and 50 bytes of Low-power static RAM.
This device includes 6800 multiplexed bus interface circuit and 8085s multiplexed bus interface as well, so it can be directly connected to 8085 etc.
The Real-Time Clock plus RAM has two distinct uses. First, it is designed as a battery powered CMOS part including all the common battery backed-up functions such as RAM, time, and calendar. Secondly, the 146818 may be used with a CMOS microprocessor to relieve the software of time-keeping work-load and to extend the available RAM of an MPU.

Absolute maximum ratings

Supply voltage V_{CC} ——— −0.3 to +7.0V
Input voltage ——— −0.3 to +7.0V
Operating temperature range ——— 0 to 70°C
Storage temperature range ——— −55 to +150°C

Features

- Time-of-Day Clock and Calendar
  - Counts Seconds, Minutes, and Hours of the Day
  - Counts Days of Week, Date, Month, and Year
- Binary or BCD Representation of Time, Calendar, and Alarm
- 12- or 24 Hour Clock with AM and PM in 12-Hour Mode
- Automatic End of Month Recognition
- Automatic Leap Year Compensation
- Interfaced with Software as 64 RAM Locations
  - 14 Bytes of Clock and Control Register
  - 50 Bytes of General Purpose RAM
- Three Interrupts are Separately Software Maskable and Testable
  - Time-of-Day Alarm, Once-per-Second to Once-per-Day
  - Periodic Rates from 30.5μs to 500ms
  - End-of-Clock Update Cycle
- Programmable Square-Wave Output Signal
- Three Time Base Input Options
  - 4.194304MHz
  - 1.048576MHz
  - 32.768kHz
- Clock Output may be used as Microprocessor Clock Input
  - At Time Base Frequency ÷ 4 or ÷ 1
- Multiplexed Bus Interface Circuit
- Low-Power, High-Speed, High-Density CMOS



TOP VIEW

Electrical characteristics D.C. (V_{CC} = 5.0V ± 10%, V_{SS} = 0V, Ta = 0 to + 70°C, unless otherwise noted.)

Parameter		Symbol	Test Condition	min	typ	max	Unit
Supply voltage	V_{CC}			4.5	5.0	5.5	V
Input voltage	V_{IL}			−0.3	–	0.7	V
	V_{IH}			V_{CC} −1.0	–	V_{CC}	V
Operating temperature	T_{opr}			0	25	70	°C
Input "High" voltage	$AD_0 \sim AD_7$, $\overline{CE}$, AS, R/$\overline{W}$, DS, CKFS, PS	V_{IH}		V_{CC} −2.0	–	V_{CC}	V
	$\overline{RES}$			V_{CC} −1.0	–	V_{CC}	
	OSC_1			V_{CC} −1.0	–	V_{CC}	